Labs21: Improving the Performance of U.S. Laboratories

What is the Labs21 Initiative?

- A joint EPA/DOE initiative to improve the environmental performance of U.S. laboratories.
- Focus on improving energy and water efficiency, encouraging renewable energy sources, and promoting environmental stewardship in laboratories.
- Three components:
  - Voluntary Partnership program
  - Training
  - Tool kit

Why is Labs21 Needed?

- Laboratory spaces are far more energy intensive per square foot than the typical office building.
- Potential for reducing energy use at laboratories can be as high as 60 percent based upon EPA's experience.
- Reducing laboratory energy use will significantly reduce carbon dioxide emissions, a primary greenhouse gas.
- Lower energy use will reduce demands on local and regional resources.
- Energy cost savings possible from federal labs may be $200 million to $800 million annually.

Why is Labs21 Needed? (cont'd)

- Laboratories represent an important growth industry.
- Laboratories can help commercialize new technologies, making them more affordable.
- Laboratories are not speculative buildings—they present investment opportunities that extend beyond those of commercial buildings.
- Laboratories are often owner-occupied which facilitates the use of life cycle cost strategies.

The Labs21 Approach

Labs21 is dedicated to the pursuit of sustainable, high-performance, and low-energy laboratories that will:

- Minimize overall environmental impacts.
- Protect occupant safety.
- Optimize whole building efficiency on a life-cycle basis.
- Establish goals, track performance, and share results for continuous improvement.

Basic Principles of the Labs21 Approach

- Adopt voluntary goals.
- Assess opportunities from a "whole buildings" approach.
- Use life-cycle cost analysis as an important decision-making tool.
- Incorporate a comprehensive, whole building commissioning process into new construction and retrofit projects.
- Employ a range of energy and water efficiency strategies.

Benefits for Participating Laboratories

- Lower laboratory utility and operating costs.
- Reduced health and safety risks.
- Improved facility management.
- Reduced pollution and greenhouse gas emissions.
- National recognition and an enhanced image.
- Access to technical assistance.
- Support for emissions tracking and trading.

Partnership Program

- EPA and DOE will establish voluntary partnerships with interested public and private sector labs.

- The Labs21 Team will provide technical expertise to the partners. Working with the Labs21 Team, each partner will:
  - Set voluntary energy and water efficiency goals.
  - Assess the opportunities for implementing energy and water efficiency activities.
  - Measure and report progress.

Pilot Partner Participation Requirements

- Adopt the Labs21 principles for improving energy and water efficiency.
- Commit to a specific pilot project when designing a new laboratory or retrofitting an existing one.
- Work with EPA and DOE to define the pilot project within Labs21 principles.
- Help the Labs21 Team develop a method to measure and evaluate the success of the project.
- Grant EPA and DOE permission to publicize partnership activities.
- Participate in the annual Labs21 conference.

Labs21 Pilot Partners

Private Sector Partners

- Abbott Laboratories
- Bristol-Myers Squibb
- Carnegie Mellon University
- Duke University
- Wyeth-Ayerst Pharmaceuticals

Federal Partners

- Lawrence Berkeley National Laboratory
- National Oceanic & Atmospheric Administration
- National Renewable Energy Laboratory
- Sandia National Laboratories

Training

- Our education and training targets:
  - Design professionals (practicing architects, mechanical engineers, and code officials)
  - Laboratory O&M management personnel
  - Architecture and engineering students
- EPA and DOE are sponsoring a series of one day workshops in 2002.
- EPA and DOE can provide instructors for additional one day workshops for 15 or more persons with the assistance of a sponsor. The sponsor would be responsible for reproducing training materials, securing suitable space, and other logistics.

Labs21 Conference

January 8-10, 2002
Hotel Washington
Washington, DC

www.epa.gov/labs21century

How Do I Participate?

- Join the Labs21 Network by submitting an e-mail to <labs21@erg.com>.
- Visit the Labs21 Web site at <www.epa.gov/labs21century> for more information as the program evolves.

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